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ABSTRACT

In a study of the processes used to compose a story, 12 Portuguese/English bilingual adults created narrations for 2 published, wordless picture stories and, while viewing a videotape of their narration, recalled aloud the processes they used in constructing the stories. One study was narrated in Portuguese and the other in English. The narrations and thinking-aloud were transcribed and analyzed for comments in four areas, including: reference to or use of prior knowledge; information processing constraints; audience awareness and textual space; and linguistic constraints. Results for the fourth category are presented here. It is concluded that the narratives composed by the participants contained examples of a lexicalization problem. Repeated successful and unsuccessful lexical searches, avoidance of certain words and structures, intrusions of one language into another, efforts to use descriptive variety and poetic structures, and even serendipitous discoveries appeared in the narrative and think-aloud tasks, strongly substantiating the claim that linguistic constraints influence the composing of oral narratives. Collection of both first- and second-language composition information was found especially useful. A 50-item bibliography is included. (MSE)

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Processes Involved in Composing a Narration in a First and a Second Language

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What processes are involved when someone is struggling to compose a story? Is a description of these processes as they occur in a first language generally adequate in describing the same task now performed in a second language? These questions point to an issue that researchers in writing have been struggling with and that was most clearly outlined in a paper by McCutchen (1984). There, she argued that current composition research had over-emphasized the problem solving and planning aspects of writing at the expense of considering its linguistic aspect. By linguistic aspect, McCutchen was referring to the special constraints that influence the writer as soon as he or she begins to put actual words to ideas. The linear nature of language, the constraints placed upon the writer by attempts to maintain coherence, grammaticality, and topic focus, the recursive effect on thinking of words the writer lights upon, all influence the writing process in immediate and powerful ways. McCutchen's ideas seemed particularly relevant when considering the composing process in a second language. People proficient in all the language modes in their first language may have difficulty composing in a second language, not because they cannot plan their writing and construct a meaning they want to communicate, but because they encounter difficulties at the local, or surface, or word level. Such composers might prove particularly useful in revealing strategies for converting thought to language because the process should be more effortful and thus more easily observed in them.

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To pursue this objective, we chose an oral narration task, asking bilingual speakers to narrate the storylines for wordless, picture stories. Oral narration was chosen because it gives participants the same linguistic and conceptual composition task as written narration without imposing the constraints that the written code in a second language may have. We wanted our subjects to be concerned about what their story was and how they were expressing it in words, but not to be worried about spelling conventions. Specifically, we videotaped 12 participants telling one story in Portuguese (L1) and telling another in English (L2). After each story, participants were asked to share out loud any thoughts they remembered experiencing during their storytelling. Our methodology was guided by the

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narrative studies of Polanyi (1982) and Tannen (1984), and by the think-aloud studies of Flower and Hayes (1984; Flower, Hayes, Carey, Schriver, & Stratmen, 1986) and retrospective interviews of Odell and Goswami (1984) on the writing process. The emphasis throughout was on the cognitive processes involved in spontaneous oral narration. The retrospective think-aloud commentary, together with the narrative data, furnished the primary data which we transcribed and analyzed for evidence of the mental processes involved in putting language to thought.

We began data analysis, following the guidelines of qualitative analysis (cf. Miles & Huberman, 1984; Goetz & LeCompte, 1984), with some very general expectations of what we would find. We then refined categories from several "passes" through the data and, in a fuller report of these data, we present four major categories of conclusions which we felt were best supported by what our participants had revealed and by the existing literature on the process of composition. In this report, we concentrate on the one of these propositions, the central problem delineated by McCutchen (1984) involved in the lexicalization process. In the sections that follow, we will first provide a flavor of the general theoretical framework that we brought to the study. We will then describe in greater detail our methodology. As we report the details of data analysis, we will return to the literature on narration and composition to describe more fully the lexicalization process as we saw it supported by the data and by previous work in this area. Finally, we will conclude by summarizing our findings and drawing some implications for research on the connection between thought and language and for second language instruction.

A General Perspective on Written Composition and Oral Narration

Our approach in this study was premised on the belief that reading, writing, speaking, and listening all involve active language processing and creative construction. The "mental machinery" involved in writing and speaking (and indeed reading and listening) must share more similarities than differences. While operating through different outward modes, writers and speakers can only communicate with the tacit agreement and active contribution of readers and listeners, who actively reconstruct incoming messages (Nystrand, 1982; Tierney & Pearson, 1983). Similarly, writers and speakers actively interpret what they want to say or write to arrive at

a meaning they can express in words. The following propositions, taken from Schallert (1987, pp. 65-66), provide more details of the general perspective we held as we began the study:

1. Reading is an activity that involves the coordination of interactive perceptual and cognitive processes, sharing the resources of a limited-capacity processor, with the goal of making sense of a message (e.g., Lesgold & Perfetti, 1981; Roser & Schallert, 1983; Stanovich, 1986).

2. Reading comprehension in particular is a meaning-making activity, a purposeful process by which a reader takes the print as clues for reconstructing the author's message. Included in this view is the reader's apprehension of not only the sense but also the significance of the message (e.g., Anderson, 1984; Roser & Schallert, 1983; Tierney & Pearson, 1983).

3. Writing is on the one hand the reverse of reading--i.e., a process by which an author makes ideas explicit and renders these into text form--and, on the other hand, the same as reading--involving as it does the construction of meaning influenced by existing knowledge and salient goals for communication (e.g., Eckhoff, 1983; Nystrand, 1982; Squire, 1983; Tierney & Pearson, 1983).

4. For both reading and writing, theorists have been most interested in describing the underlying processes involved--exactly how we coordinate the subprocesses and respond to the constraints inherent in meaning making (e.g., Flower & Hayes, 1984; Just & Carpenter, 1984; Kintsch & van Dijk, 1978; McCutchen, 1984; Scardamalia, Bereiter, & Goelman, 1982).

5. The above interest has accompanied a new view of text. Texts are no longer taken as having single, stable, correct meanings. Nor is the term *text* reserved only for external realizations of language extending beyond a sentence in length. Instead, ***text*** refers to language in use, printed or spoken, by an author with an authentic purpose. Texts can be of any length ranging from single words to whole volumes (e.g., Beaugrande & Dressler, 1981; Nystrand, 1982).

6. Reading and writing, like other communication acts, are influenced profoundly by the social situation in which they occur. Thus, context, purpose, task, social functions are all relevant sources of variables that will determine how compositions and comprehension proceed and what form of text results (e.g., Bransford, 1979; Faigley, 1986; Odell & Goswami, 1984; Schallert, Alexander, & Goetz, 1985).

The above points reflect our general beliefs about reading and writing as representative of two of the language modes. We were also influenced to a lesser degree by the literature on oral narration. In that literature, oral narration is portrayed as an important language ability, a natural part of human experience from early childhood on (cf. Eisenberg, 1985; Labov, 1972; Fakhri, 1984; Gee,1985). The storyteller must create everything in a story: vocabulary, syntax, complication, resolution, emphasis, attitudes, and evaluation. Successful narration involves "taking the floor" for extended periods of explanation or narration to one or more persons. It is seen as requiring creative interpretation, construction, and language synthesis, one of the highest levels of thinking. Thus, both written and oral narration are portrayed in the literature as interactive language skills that draw on common language processes simultaneously.

Yet, compared to writing, the actual process of oral narration has been relatively unexamined. The technical and logistic problems involved in recording and transcribing oral speech data are partly to blame. For us, attempting to use a methodology widely used in written composition research, we faced the problem that the very nature of speaking--the vocal cords already engaged-- precludes simultaneous thinking "out loud." As a solution, we designed a method of videotaping the narration, and then showing it back to the participants to aid them in recalling their thinking. Participants were encouraged to pause the playback in order to share out loud any thoughts remembered whenever possible. Everything depended on their ability to recall and vocalize narrative thoughts as accurately as possible. We hoped that by witnessing their stories as audience, participants would more easily recall their thinking.

As a research tool, think-aloud data depend on the subjective report of the research subject and have been vigorously criticized for introducing bias and altering the very phenomenon being observed (Tomlinson, 1984). However, if interpreted with some caution, such self-reporting can be quite useful (Ericsson and Simon, 1984; Sternglass, & Pugh, 1986).

METHOD

Participants

Twelve Brazilians--6 women and 6 men--agreed to participate in the study. Coming from various geographic regions of Brazil, they included five college students, two housewives, two physicians, and three other professionals. Participants had to be at least 20 years old, be competent in their native language, and possess intermediate to advanced ESL (English as a Second Language) fluency. None of them were previously acquaintedwith us. Most were recruited by phone, one of us explaining the project to them in Portuguese. Participants received no financial compensation, but were later given a copy of their transcribed stories.

Story Materials

To elicit narrative speech, we chose three published, wordless, picture stories, written for young children. Characteristic of such stories is their clear, engaging storyline expressed solely through pictures. "Readers" must create their own meaning for the story and often cannot help but put the story into words. In this sense, they are comparable to Chafe's (1980) and Tomlin's (1984, 1985) silent films and Dechert's (1983) short series of illustrations to elicit spoken language, or Váradi's (1983) series of drawings to elicit written language. Our procedure allowed participants to tell stories in their own words, but within controlled parameters of theme, topic, and sequence. Figure 1 presents the first eight frames from the practice story.

Each participant first carried out the entire narration and think-aloud procedure on a practice story. This story, called *Hiccup*, written by Mercer Mayer, was told half in Portuguese and half in English. Participants then told the two main stories, *Frog Goes to Dinner*, by Mercer Mayer (22 pages), and *The Silver Pony*, by Lynd Ward (23 pages, abridged). *Frog Goes to Dinner* is a humorous farce about a family's pet frog getting loose in a fancy restaurant and causing a disturbance. *The Silver Pony* is a mystical, adventure story about a young boy flying on a silver pegasus around the world. Referred to hereafter as the frog and pegasus stories, the two were counterbalanced in terms of order of telling. All participants told the first story (either frog or pegasus) in Portuguese

and the second in English. Each story was told an equal number of times in both languages.

FIGURE 1

Example of a wordless picture story. These Eight frames are taken from the beginning of the practice story entitled *Hiccup*.

Procedure

To establish a natural and relaxed setting, we had participants tell the stories while seated in a comfortable arm chair in a living room, across from one of the researchers. A color video camera unobtrusively sat across the room, and a small television monitor was on a side table near the participant. Think-aloud material was audio-recorded with the same clip-on lapel microphone used for the audio portion of the videotaping.

One of us had prerecorded the directions on videotape in Portuguese for showing to each participant, this to guarantee

uniform treatment, increase familiarity with the videotape format, and establish Portuguese as a viable language that could be understood. A written version of the directions was also made available to participants. The following are some key points made in the directions:

1. To think of the tasks in the experiment not as tests, but challenges.

2. To become the "author, creator, or painter" of the stories, and tell them in whatever way seems sensible, as one might tell a story to friends or children.

3. To include as much detail as seems necessary and not worry about language mistakes made in the telling, since everyone makes mistakes.

4. While viewing the playback of each story, to pause it as often as necessary to recall thoughts experienced during its telling, "moment by moment, phrase by phrase, word by word."

The directions suggested to each participant "look at your face and study the way you talked on the playback. . . . What might have caused you to laugh, move your head, or raise your eyebrows, etc.?"

Participants were allowed time to look over each of the story booklets before videotaping began and to ask any procedural or vocabulary questions. When ready, each began his or her narration by pressing the remote button to start the camera, knowing that the story must be told in its entirety without stopping the recording.

Immediately following each narration, the researcher rewound the videotape and showed its replay. While viewing it, participants attempted to recall aloud any thoughts remembered during the narration, pausing or backing up the playback for a second look whenever necessary. If a participant was silent for long periods during the playback, the researcher asked if he or she could remember anything. The think-aloud task thus resembled an interview, since the researcher both questioned and responded to participants' queries in attempting to aid the think-aloud process.

The combined narrative and think-aloud tasks took between 35 minutes and an hour for each story, with a short break between

stories. After the last story, participants completed a short biographical questionnaire.

Data Transcription

We transcribed to written form the narrations and more than 20 hours total of oral think-aloud material. We adopted a number of notational conventions to delineate think-alouds from narrations All spoken Portuguese was translated to English prior to transcription. Portuguese remained only when it was the topic, always followed by its English translation. English occurring within Portuguese narrative context and throughout the think-aloud material was bold-faced to differentiate it from translated Portuguese. The English narrations were not bold-faced, since they were composed in English. Portuguese occurring within English narrative context was put between quote marks, followed by the English translation. We also included markings for temporal hesitation phenomena, such as laughter and the filled pauses "ahh" and "umm." Unfilled pauses were indicated by ellipses, e.g., ". ." , ". . ." or ". . . .".

The transcriptions were checked several times for accuracy, and several participants were contacted for clarification. A native Portuguese speaking consultant verified all Portuguese words, phrases, and punctuation in the transcripts. (See Bowie,1987, pp. 209-362, for the complete transcripts.)

Data Analysis

Although our initial focus was on the lexicalization process in composition, we saw immediately that the data would yield insights into broader aspects. Specifically, we found that our participants commented on aspects of their experience that were related to well-established phenomena in the composition literature. What McCutchen (1984) and Flower & Hayes (1984) had commented on, the need to pay attention to both the planning/problem-solving/knowledge-based aspect and the language-based aspect, became clear as we began our analysis. We eventually settled on four broad categories of comments, three of which made connection with the planning/ knowledge literature and one of which pertained directly to our focal interest in the lexicalization process. Below, we present brief descriptions of three of the categories, categories that in

this paper we do not attempt to exemplify further. The fourth category is our focus here.

Prior Knowledge. The first proposition states that prior knowledge influences language processing, both productive and receptive, and that this prior knowledge is unique for each person and situation (c.f., Anderson, Reynolds, Schallert, & Goetz, 1977; Hayes & Flower, 1980, 1983; Schallert, 1982, 1987). In terms of our participants, prior knowledge came into play as they interpreted the wordless stories, making sense of them in terms of knowledge they could bring to bear in constructing meaning. Then, as they told their stories, our participants had to contend not only with the current meaning they were constructing on a second look at the picture books but also with their memory for their first interpretation and for the developing story made public and permanent on the videotape.

Information Processing Constraints. The second proposition states that there are demands put on language users by information processing constraints (c.f., Chafe, 1980; Matsuhashi, 1981; Stanovich, 1981, 1986; Scardamalia, 1981; Bereiter & Scardamalia, 1984). The perceived complexity of reality fluctuates in everyday experience, with greater complexity requiring more exertion of thought and a concomitant higher cognitive processing demand. When demand threatens to exceed capacity, consolidation, prioritizing, simplification, or sometimes loss of one's train of thought (comparable to a computer "crash") may occur. Thus for our participants, we found many occasions when the sheer load of attempting to do more than one can successfully manage was evident.

Audience Awareness and Textual Space. Our third proposition states that language processing reflects pervasive concerns with real and/or imagined audiences (c.f., Nystrand, 1982). As a social activity, the participation of both sender and receiver presupposes an awareness in each of the other. Both writers and speakers tailor what they say or write to perceived expectations of their reader or listener. When successful, communication is experienced as effortless and the focus is on ideas and intentions, not on the words. For our participants, this was exhibited in a number of ways. There were some obvious accommodations made to particular audiences as well as occasions

when the narrators became confused or broke through the storytelling frame and addressed the researcher directly.

Linguistic Constraints. The fourth proposition states that linguistic constraints influence language processing, much as do information processing constraints (c. f., Kaufer, Hayes, & Flower, 1986; McCutchen, 1984). Language users must conform to certain linguistic conventions in order to be understood, conventions such as maintaining proper focus by using the correct given/new contrasts, achieving cohesion, choosing words that have the right level of novelty and the right kind of connotations and yet, at the same, are clear in expressing what one wants to say. Awareness of the need to follow such conventions places strong demands on the cognitive apparatus. McCutchen has written that "on-line" writing involves at some point committing thought to the linear form of a sentence, with all the uncertainties pertinent to where the sentence will end up. Speakers must similarly achieve this linearity, but with the additional disadvantage that revision is often more difficult in speaking than in writing. In the next section, we explore this proposition in detail and provide examples of supporting data, after some preliminary information describing the participants' overall performance.

RESULTS

Participants were generally most willing to tell stories and talk about their mental processes. Occasional reticence may have been partly due to their interest in viewing themselves and their narrative creation on videotape. Being videotaped was a new experience for all but one.

As mentioned previously, the stories were counterbalanced for language, resulting in each story having 6 Portuguese versions and 6 English versions, half told by women and half told by men. Elapsed narrative times ranged from 2:57 to 11:15, averaging just over 8 minutes. Stories averaged 892 words, 18.1 words per page in Portuguese, and 17.5 words per page in English. Participants not surprisingly spoke a little slower in English than in their native Portuguese. However, since all data were mutually exclusive (that is, no person told the same story in both languages), quantitative comparisons by language were not possible. Most were quite adept in either Portuguese or English storytelling and thinking aloud.

Participants produced 489 total retrospective think-alouds. With 116 think-alouds culled out because they were after-the-fact corrections, questions to the researcher, or continuations of previous think alouds, there remained a total of 373 novel and significant think-alouds, or i5.5 per story. (See Bowie,1987, pp. 71-92, for additional quantitative results.)

In the section that follows, we provide examples from narrations and think-aloud commentaries that pertain to the linguistic constraint proposition. All names of the participants have been changed to protect their privacy. Note that it was not at all unusual for an example to depict more than one of the propositions described above. In choosing particular examples for this report, we are emphasizing a particular perspective on each excerpt, aware of others that could be taken.

Linguistic Constraints

Influenced by McCutchen (1984), this proposition states that writers (and speakers) are involved in the uncertain and unpredictable world of linear sentence generation and "text-level processes." With revision less available in extemporaneous speaking than in writing, and with the added burden of having to speak in a second language, narrators in this study frequently experienced difficulties in producing sentences. Nowhere was this more evident than in Carlos' admission of inadequate sentence building in the frog story:

> Think-aloud (p. 10) **I was not satisfied with the construction of the particular sentence. I . . I . . wanted to say this: "with the consternation that went on throughout the restaurant." . . . And I could never get that . . built . . that created . . . And that messed me up.**

Lexical uncertainty was manifest in both English and Portuguese narrative data. Marta, for example, translated **"barn"** to "cocheira" in the Portuguese pegasus story (p. 14.) She consciously doubted her accuracy, agreeing that "corral" might have worked better, but missed the Portuguese translation of the English **"hayloft"** to "palheiro," and **"barn"** to "celeiro." Both Luiz

and Carlos admitted that in certain instances they translated from English to Portuguese.

All participants to various degrees strove to achieve lexical variety by avoiding the repetition of a word or phrase. Ana, for example, was dissatisfied with the choice of "surpreso" ["surprise"] to describe the boy sleeping outside his house in the pegasus story:

> Narration (p. 20) Pedrinho, to his surprise, was sleeping on . . on the grass.
> Think-aloud I don't know why I put in the word "surpreso." Because if he is sleeping, he couldn't have surprise. He could be surprised only after he woke up. . . . I don't know. This word came, and I don't know why. Perhaps because I had used it before. . . . And I left it. . . . I wasn't going to correct it.

In addition to variety, Carlos sought to distinguish his narrations with aesthetic language:

> Think-aloud (p. 5) Here I was trying to get away from the expression "cavalo voador" ["flying horse"] . . . "cavalo alado" ["winged horse"] **is a good word but too awfully . . snobby**. . . . **And** "cavalo voador," . . **too common**.

Occasionally, synonyms vied equally for narrative attention, such as when Liza was undecided between "levantar" ["get up"] and "acordar" ["wake up"] in the pegasus story (p. 2). Paulo was similarly undecided in the pegasus story between describing the boy's parents as "os seus pais" ["his parents"] and "o seu pai e sua mãe" ["his father and his mother"], and continued to struggle with the choice as he told the story (pp. 2, 10, 20).

Another difficulty emerged when participants were unsuccessful in finding the correct and corresponding translation of a word from one language to another. For example, Carlos claimed his incorrect Portuguese "alimentar as galinhas" ["feed the chickens"] in the pegasus story was caused by direct translation from English (p. 2).

Finally, there were many instances where participants made word-level choices that resulted in particularly well-told narrations. For example, near the end of the story, Marta compared the small, real horse with the pegasus, using the same adjectives to describe it as she had used earlier to describe the pegasus (p. 5):

Narration (p. 22) And the horse was still small. But he was elegant and beautiful. He was a friend to Francisco.
Think-aloud "Imponente" is **"elegant." "Elegant,"** "imponente." And at the time that I was describing this little horse, I was making a comparison. He looked very much like the horse of his imagination.

Liza expressed satisfaction with her metaphor, "fruta da imaginação" [fruit of the imagination] in the pegasus story:

Narration (p. 12) Then the boy decided to return to the . . to the foot of the apple tree, and he started picking apples. And suddenly the horse appears again. And he dropped the whole basket of apples to the ground, and very happily looked at the horse. Because he knew that it was not just . . fruit of his imagination.
Think-aloud There was a combination there, "fruit of the imagination," "creation of his mind," right? The "fruit of his imagination" is the product of his mind. Do you understand?
R: Was this spontaneous?
Liza: It was spontaneous. It was . . it was spontaneous language creation. Really it, it was a . . a, a natural creation that suggested itself, that. . that fit with the . . with the . . with the word "apple." It was "fruit" that he was picking. Very often, perhaps . . the poet, when . . when working on a work of art, I believe the word comes naturally and fits with the rhyme.

Carlos invented two new play-on-words in the frog story; one was pre-planned, one was not:

Narration (p. 1) And [Mr. Green] has some sort of "in" with Johnny. For instance, he can get "in" places wh-- . . where Johnny . . ahh . . might let him stay, like Johnny's coat pocket.
Think-Aloud
R: Was this planned?, **"In," "in?"**
Carlos: **No. It was spontaneous.** [laughing]
Narration (p., 6) And as the saxophone sounded different, the drummer said to the saxophone player, "If I did not know better, I would say you have a frog in your throat, I mean in your saxophone."
Think-Aloud

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> Carlos: [laughing] **That one I had thought up. That was quite . .** [laughing] **But I . .** [laughing]

These examples lend strong support to the proposition that all language users encounter "on-line" linguistic constraints at the local level in their sentence production, and that these constraints occasionally interfere with previous narrative plans made at a more global level. Liza described the exigencies of lexical choice with the metaphor of words flowing like water, or like luggage at an airport baggage claim:

> Think-Aloud (p. 18) I see another crossing of words, words flowing like this, rapidly, the words. . . . In other words, it's so quickly appearing like that, those waters that come like that, those words that are flowing. Pick one to be able to pick another. [laughing] Which one do you take first? Because they are in a line. It's like when you leave the airport with your bags. And you are waiting for your luggage. And that line comes. And then you are taking them. How will you do this? . . . Passing. And you will take one. Right? And you . . you have huge numbers of words there. Many. And you're going to take one.

CONCLUSION

Language use is a conscious, active process, and its processes are to varying degrees self-reportable by the user. We found that the narratives composed by our participants, as well as their self-reported think-alouds, contained valid and convincing examples of what McCutchen had described as the lexicalization problem. Participants experienced the on-line demands of producing correct language in circumstances that they did not fully control. Having made plans in advance for certain narrative content frequently proved insufficient at some point during actual storytelling. Converting unexpected thoughts into understandable language output required spontaneous language production, using linear, non-hierarchical methods of sentence generation. Regardless of the degree to which content had been chosen, linguistic constraints impinged on the spoken output of all narrators in the same fashion as McCutchen (1984) argued takes place for writers: "sometimes to a preplanned next idea, sometimes to a newly discovered thought,

and sometimes to a dead end" (p. 228). Repeated examples of successful and unsuccessful lexical searches, avoidance of certain words and structures, intrusions of Portuguese into English and vice versa, efforts to use descriptive variety and poetic structures, and even serendipitous new discoveries (such as Liza's spontaneous "fruta da imaginação" metaphor) emerged in abundance from narrative and think-aloud tasks, strongly substantiating the claim that linguistic constraints influence the composing of oral narratives.

Although we did not report on them at great length in this paper, we did find clear evidence for the other three propositions described above. For example, with regards to the prior knowledge proposition, we found that our participants had to construct an understanding of the wordless picture stories consistent with their existing knowledge regarding rural life, frogs, restaurants, parent-child relationships, and so forth. Secondly, they were clearly subject to information processing constraints. We saw many instances where they had to manage their storytelling so as not to exceed processing capacity and where they showed awareness of options that were considered but not taken, this in order to "keep on track." In both L1 and L2 storytelling, participants continually strove to maintain a balance between the management of grammatical, ideational, memory, and time concerns. Finally, participants were to various degrees all aware of audience during their storytelling.

That the processes represented in these propositions frequently overlapped each other--as for example, linguistic constraints and information processing constraints--should not be surprising. For example, Liza's "fruta da imaginação" metaphor and Carlos' "frog in your throat, I mean in your saxophone" play on words, previously mentioned as supporting the linguistic constraint proposition, also lend support to the information processing proposition, as well as to our view of active language composing. Form and meaning in language use nearly always go hand in hand.

As we had expected, collecting both L1 and L2 narrative and think-aloud data proved fruitful to our research, since L2 language use was indeed more effortful, and therefore useful in providing a description of what takes place during oral composition. As previously mentioned, for any one participant, the data were mutually exclusive and we could not directly compare an individual's Portuguese and English narrations on the same material. Nevertheless, our data did not point to radically different processes in L2 composing. Hints of differences were more in terms of degree than of kind. For example, participants seemed more

concerned with choosing the correct word or grammatical forms when narrating in their less dominant language whereas they seemed more able to pay attention to the story as a whole when telling a story in their dominant language. However, there were many examples of word-level concerns in L1 composing and many admirable feats of story creation in L2 composing. We were generally much more struck by the similarities in composing processes evidenced in both language situations than by any clear differences.

As for implications for language teaching, we agree with one of our participants that wordless story books should be used in L2 teaching. The use of pictures is, of course, not a new idea in language teaching, but certainly one that has not been sufficiently exploited to date. We feel its use is potentially an excellent one, since individual language creativity would be encouraged, and in fact demanded from such activity. Wordless picture books are widely available in the children's book stores and sections of most libraries, and are frequently just as appealing to adults.

In conclusion, we believe that the active meaning construction viewpoint for all language use is well supported by this study's findings. Throughout the planning, narration, and retrospective portions, the experiment required an abundance of mental activity. More than one participant commented that they were exhausted from the mental effort required and one commented that he had worked up a considerable appetite. No language use can be passive.

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